Listing of Claims:

1. (Previously Presented) An ultrasonic medical device comprising:

an ultrasonic probe comprising a proximal end, a distal end and a longitudinal axis extending therebetween, a portion of the ultrasonic probe extending along the longitudinal axis having a radially asymmetric cross section;

a transducer configured to vibrate, the transducer being coupled to the ultrasonic probe; and

wherein the ultrasonic probe is configured such that a torsional vibration is created in the portion of the ultrasonic probe having the radially asymmetric cross section when the transducer vibrates and cavitation is produced, in a medium surrounding the ultrasonic probe, along the portion of the ultrasonic probe having the radially asymmetric cross section when the portion of the ultrasonic probe having the radially asymmetric cross section torsionally vibrates during use.

2. (Original) The ultrasonic medical device of claim 1 wherein the torsional vibration of the ultrasonic probe causes a rotation and counterrotation along the longitudinal axis of the ultrasonic probe.

3. (Original) The ultrasonic medical device of claim 1 wherein the torsional vibration of the ultrasonic probe is propagated in a forward direction and a reverse direction about a plurality of torsional nodes along a portion of the longitudinal axis of the ultrasonic probe.

4. (Cancelled)

5. (Previously Presented) The ultrasonic medical device of claim 1 wherein the cavitation occurs around the portion of the ultrasonic probe comprising the radially asymmetric cross section.

6. (Original) The ultrasonic medical device of claim 1 wherein the torsional vibration of the ultrasonic probe produces a plurality of torsional nodes and a plurality of torsional anti-nodes along a portion of the longitudinal axis of the ultrasonic probe.

7. (Original) The ultrasonic medical device of claim 1 wherein a length of the longitudinal axis of the ultrasonic probe comprises an approximately rectangular shaped cross section.

8. (Original) The ultrasonic medical device of claim 1 wherein a length of the longitudinal axis of the ultrasonic probe comprises a spline shape.

9. (Original) The ultrasonic medical device of claim 1 wherein a plurality of projections extend from an outer surface along a length of the ultrasonic probe.

10. (Original) The ultrasonic medical device of claim 1 wherein a length of the longitudinal axis of the ultrasonic probe has a cross sectional shape selected from the group consisting of elliptical, star shaped, rectangular, oval, triangular, trapezoidal, circular with a flat spot and square.

11. (Previously Presented) The ultrasonic medical device of claim 1 wherein the torsional vibration generates acoustic energy in the medium surrounding the ultrasonic probe during use.

12. (Previously Presented) The ultrasonic medical device of claim 1, further comprising an ultrasonic energy source adapted to deliver ultrasonic energy in a frequency range from about 10 kHz to about 100kHz.

13. (Cancelled)

14. (Original) The ultrasonic medical device of claim 1 wherein the ultrasonic probe supports the torsional vibration when flexed.

15. (Original) The ultrasonic medical device of claim 1 wherein the ultrasonic probe has a flexibility allowing the ultrasonic probe to be deflected and articulated.

16. (Cancelled)

17. (Original) The ultrasonic medical device of claim 1 wherein the ultrasonic probe comprises a varying cross section from the proximal end of the ultrasonic probe to the distal end of the ultrasonic probe.

18. (Original) The ultrasonic medical device of claim 1 wherein the ultrasonic probe is disposable.

19. (Previously Presented) A medical device comprising:

an elongated probe comprising a proximal end, a distal end, and a longitudinal axis extending between the proximal end and the distal end, a portion of the elongated probe extending along the longitudinal axis having a radially asymmetric cross section;

a transducer configured to convert electrical energy into mechanical energy, the transducer being coupled to the elongated probe; and

wherein the elongated probe is configured such that a torsional vibration having a plurality of torsional nodes and a plurality of torsional anti-nodes is created in the portion of the elongated probe having the radially asymmetric cross section when the transducer converts electrical energy into mechanical energy and cavitation is produced, in a medium surrounding the elongated probe, along the portion of the probe having the radially asymmetric cross section when the portion of the elongated probe having the radially asymmetric cross section torsionally vibrates during use.

20. (Original) The medical device of claim 19 wherein the torsional vibration of the elongated probe produces a rotation and a counterrotation along the longitudinal axis of the elongated probe.

21. (Original) The medical device of claim 19 wherein the torsional vibration of the elongated probe is propagated in a forward direction and a reverse direction about the plurality of torsional nodes of the elongated probe.

22. (Previously Presented) The medical device of claim 19 wherein the torsional vibration generates acoustic energy in the medium surrounding the elongated probe during use.

23. (Previously Presented) The medical device of claim 19 wherein the cavitation occurs over an active area of the elongated probe along the portion of the longitudinal axis comprising the radially asymmetric cross section.

24. (Previously Presented) The medical device of claim 19 wherein a length of the elongated probe comprises a spline shape.

25. (Previously Presented) The medical device of claim 19 wherein a length of the elongated probe has a cross sectional shape selected from the group consisting of elliptical, star shaped, rectangular, oval, triangular, trapezoidal, circular with a flat spot and square.

26. (Previously Presented) The medical device of claim 19 wherein a plurality of projections extend from an outer surface of the elongated probe along a length of the elongated probe.

27. (Previously Presented) The medical device of claim 19, further comprising an ultrasonic energy source is adapted to deliver ultrasonic energy in a frequency range from about 10 kHz to about 100 kHz.

28. (Cancelled)

29. (Original) The medical device of claim 19 wherein the elongated probe supports the torsional vibration when flexed.

30. (Original) The medical device of claim 19 wherein the elongated probe has a flexibility allowing the elongated probe to be deflected and articulated.

31. (Cancelled)

32. (Original) The medical device of claim 19 wherein the elongated probe comprises a varying cross section from the proximal end of the elongated probe to the distal end of the elongated probe.

33 – 63. (Cancelled)

64. (Previously Presented) An ultrasonic probe comprising:

a proximal end;

a distal end that terminates in a probe tip; and

a longitudinal axis extending between the proximal end and the distal end, a portion of the ultrasonic probe extending along the longitudinal axis having a radially asymmetric cross section,

wherein the ultrasonic probe is configured to produce cavitation, in a medium surrounding the ultrasonic probe, along the portion of the ultrasonic probe having the radially asymmetric cross section when the portion of the ultrasonic probe having the radially asymmetric cross section torsionally vibrates during use.

65. (Original) The ultrasonic probe of claim 64 wherein the ultrasonic probe comprises a varying cross section from the proximal end of the ultrasonic probe to the distal end of the ultrasonic probe.

66. (Original) The ultrasonic probe of claim 64 wherein a cross section of the proximal end of the ultrasonic probe is approximately circular.

67. (Original) The ultrasonic probe of claim 64 wherein the radially asymmetric cross section comprises a spline shape.

68. (Original) The ultrasonic probe of claim 64 wherein the radially asymmetric cross section has a cross sectional shape selected from the group consisting of elliptical, star shaped, rectangular, oval, triangular, trapezoidal, circular with a flat spot and square.

69. (Previously Presented) The ultrasonic probe of claim 64 wherein the ultrasonic probe comprises a varying diameter from the proximal end of the ultrasonic probe to the distal end of the ultrasonic probe.

70. (Original) The ultrasonic probe of claim 64 wherein the ultrasonic probe has a flexibility allowing the ultrasonic probe to be deflected and articulated.

71. (Cancelled)

72. (Previously Presented) The ultrasonic medical device of claim 1 wherein, during use, an ultrasonic energy source determines a resonant frequency of the transducer and provides electrical energy to the transducer at the resonant frequency of the transducer.

73. (Previously Presented) The medical device of claim 19 wherein, during use, an ultrasonic energy source determines a resonant frequency of the transducer and provides electrical energy to the transducer at the resonant frequency of the transducer.

74. (Previously Presented) The ultrasonic medical device of claim 1, wherein a length of the probe is substantially equal to an integer multiple of a one-half wavelength of a torsional resonance of the transducer.

75. (Previously Presented) The medical device of claim 19, wherein a length of the probe is substantially equal to an integer multiple of a one-half wavelength of a torsional resonance of the transducer.

76. (Previously Presented) The medical device of claim 1, wherein substantially an entire length of the ultrasonic probe has a radially asymmetric cross section.

77. (Previously Presented) The medical device of claim 19, wherein substantially an entire length of the elongated probe has a radially asymmetric cross section.

78. (Previously Presented) The medical device of claim 64, wherein substantially an entire length of the ultrasonic probe has a radially asymmetric cross section.